

REMARKS

The present amendment is in response to the Office Action dated June 6, 2006, in which claims 1-6, 8-19 and 21-28 were rejected. Applicant has thoroughly reviewed the outstanding Office Action including the Examiner's remarks and the reference cited therein. The following remarks are believed to be fully responsive to the Office Action and render all claims at issue patentably distinguishable over the cited references.

Reconsideration and withdrawal of the rejections set forth in the Office Action dated June 6, 2006 is respectfully requested.

A. Rejections of Claim 1-6, 8-19 and 21-28 under 35 U.S.C. §103(a) as being unpatentable over Liu in view of Takeda et al.

The Applicant amends the claims to incorporate the limitations of Claims 9 and 27 respectively into Claims 1 and 25, and to delete Claim 16. Corrections of the claim dependencies have also been made. Also, Applicant submits new Claims 30-34.

The present invention is directed to large liquid crystal displays. The inventions defined in claims 1 and 25 form the bumps with different shapes on one substrate to divide pixels into more domains, and forms slits on the other substrate, wherein the amount of the slits are with respect to the domains divided by the bumps. The pixel is divided into a plurality of domains by both the bumps and the slits and the arrangement of the liquid crystals in different domains can complement with each other to achieve a wide viewing angle. Moreover, the slits have a function of increasing response time of the liquid crystals, similar to that of the bumps; however, the slits do not have the drawback of light leak.

Liu (US 6,549,257) merely discloses a multi-domain structure in the LCD (liquid crystal display), and the multi-domain structure is made up with a plurality of bumps which are separately formed on two different substrates. In the other words, the cited reference Liu needs to integrate the surrounding bumps (the frame pattern of the present invention)

on one substrate with the central wall-bump (the pixel-dividing pattern or the contact pattern of the present invention) on another substrate in order to achieve the result that can be done within a single substrate by the multi-domain pattern (which includes the frame pattern and the pixel-dividing pattern) of the present invention. All the bumps of the present invention are formed on one substrate, but the multi-domain pattern on a single substrate with the pattern arrangement recited in the present invention can achieve the purpose Liu. In contrast, Liu needs to separately arrange bumps on two different substrates. The unexpected inventive step between the cited reference Liu and the present invention are nonobvious.

Although another cited reference, Takeda et al. (US 6,724,452), discloses a slit structure for the LCD, it is unable to directly replace the bump designs on Liu with the slit structures in the Takeda. The directly replacement will cause the structure of Liu incapable of dividing a pixel into multi-domains, because the Liu's design is only usable when both different substrates have bumps on them. Consequently, the motivation to combine Takeda with Liu is inconceivable and absent in both disclosures.

The most significant difference between Liu and the present invention is that the present invention focuses on dividing a single pixel into multi-domain with the multi-domain structure fitted on one side of the single substrate. The present invention further provides a solution for dividing a pixel into more domains than by using conventional pixel dividing process, such as the disclosure of Liu. The present invention adds a slit structure to another substrate. Furthermore, the disposition of the present invention is made with one careful consideration, that such disposition would not affect the original purposes of the pixel dividing, i.e. increasing the domains. In addition, the response time of the liquid crystal in the present invention can be largely shortened by the design of the present invention due to the smaller pixel region.

Since claims 2-6, 8, 10-15, 17-19 and 21-24 respectively depend on claim 1 and claims 26, 28 and 30-34 respectively depend on claim 25, these dependent claims should also be patentable under the patentability of claims 1 and 25.

B. Conclusion

In view of the foregoing, Claims 1-6, 8, 10-15, 17-19, 21-26, 28 and 30-34 pending in the application comply with the requirements of patentability define over the prior art. A Notice of Allowance is, therefore, respectfully requested.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 50-0665, under Order No. 386998051US from which the undersigned is authorized to draw.

Dated: 8/30/06

Respectfully submitted,

By 

Chun M. Ng

Registration No.: 36,878

PERKINS COIE LLP

P.O. Box 1247

Seattle, Washington 98111-1247

(206) 359-8000

(206) 359-7198 (Fax)

Attorney for Applicant